28

Plasmodium lemuris Huff and Hoogstraal, 1963

HOOGSTRAAL and Lawless, in the course of studies of the fauna and its parasites of Madagascar, made a blood film from a black lemur, *Lemur collaris,* housed in the Tananarive Zoo. Some years later the slide was examined at the Naval Medical Research Institute in Bethesda, Maryland, where thirty malaria parasites were found. The morphology of the parasite was different from any of the described species and, therefore, the authors created a new species, *Plasmodium lemuris.* Only the blood stages are known for this species.

Cycle in the Blood

PLATE LIV

The young trophozoites are small and occupy three-tenths to four-tenths of the erythrocytes. The nucleus stains rose-red. Larger trophozoites are more irregular tending toward amoeboidity. The pigment is in granules; there is no stippling of the host cell. The schizonts are in enlarged and distorted erythrocytes and display irregularly shaped nuclei. The pigment is brown and clumped into a diffused mass. Mature schizonts have not been seen.

The gametocytes are of large size and irregular in shape. The nuclei are band-like or lobed irregularly. The host erythrocyte is greatly enlarged and in many instances is almost completely filled by the parasite. In some of these forms, the rim of host cell cytoplasm, around the parasite, stains pink. It is assumed that the cells infected with this parasite are more pliable than normal cells because of the way they appear to flow around other cells in the smear.

The macrogametocytes have lavender to purple cytoplasm. The pigment is made up of small dark brown granules within vacuoles. The microgametocytes have red-staining nuclei and slate-gray cytoplasm. The pigment is like that in the macrogametocytes.

An interesting sidelight to the discovery of this parasite is that, when Dr. Huff first saw the macrogametocytes, he thought he was seeing a leucocytozoon in a mammal; strange, indeed, if it were true. He discovered later, however, that the bizarre form was in reality a distorted gametocyte inside the reddish stained sac of the host cell.

It should be relatively simple to distinguish between the malarias of lemurs. *Plasmodium foleyi* is probably a hepatocystis (see Chapter 27) since only gametocytes made their appearance in the peripheral blood. *Plasmodium girardi* is smaller than *P. lemuris* but shares other characteristics with it. Both cause distortion of the host erythrocyte and appear in bizarre shapes. *Plasmodium lemuris* has the larger gametocytes, of the two but is without the pigment located at the edge of the parasite as is true with gametocytes of *P. girardi.*

So little is known about the malarias of lemurs, especially since the description of *P. lemuris* is based on only thirty specimens, that

one hesitates to comment on them. It may be that there is only one species. Should that be true, *P. lemuris* would become a synonym of *P. girardi.*

REFERENCES

HUFF, C. G., and HOOGSTRAAL, H., 1963. *Plasmodium lemuris* n. sp. from *Lemur collaris.* J. Inf. Dis. *112* : 233-236.